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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/423,436	11/09/1999	HIROSHI KANAYAMA	991238	6727

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ARMSTRONG, WESTERMAN & HATTORI, LLP  
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WASHINGTON, DC 20006

EXAMINER

LAVILLA, MICHAEL E

ART UNIT	PAPER NUMBER
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1775

10

DATE MAILED: 02/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.  
09/423,436

Applicant(s)  
KANAYAMA ET AL.

Examiner  
LAVILLA

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1775



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Dec 31, 2001
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-7, and 9-12 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-7, and 9-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:
2. The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
3. Claims 4 and 9 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a roughened surface having grooves made by drilling or broaching, does not reasonably provide enablement for a roughened surface having grooves made by etching, shot blasting, etc. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims. At page 14, lines 28-34 of the Specification, applicant explains that techniques for obtaining a roughened surface having groove formations are limited to certain techniques that do not encompass shot-blasting, etching, flame-spraying, or chemical treatment.
4. The following is a quotation of the second paragraph of 35 U.S.C. 112:
5. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims 1, 2, 4-7, and 9-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- I. Regarding Claims 4-7, 9, and 10, it is unclear what is meant by the preamble reference to "internal combustion engine," as there is no antecedent mentioning of this phrase.
- II. With respect to the composition of the copper alloy, it is unclear whether the composition is limited to the claimed ingredients or may comprise additional ingredients. Claim 1 recites that the copper alloy contains Ag and Sn with the balance consisting of Cu. Claim 2 recites that the copper alloy may further comprise at least one additive element. Moreover, the mark-up version of Claim 1 recites that the copper alloy possesses a balance consisting essentially of Cu. Hence, it is unclear whether the copper alloy of claim 1 comprises, consists essentially of, or consists of the claimed Ag, Sn, and Cu and whether the copper alloy of Claim 2 comprises, consists essentially of, or consists of Ag, Sn, at least one additive element, and Cu.
- III. In the latter portion of Claim 1, it is unclear how to interpret the phrase that begins "one of: said Ag and Sn, . . . is present in a higher concentration in a portion of a sub-layer of the alloy than in the alloy nearest said backing metal." It is unclear what is the antecedent basis of the phrase "said Ag and Sn." Does this refer to solid-dissolved Ag

and Sn or to secondary phase Ag and Sn? It is unclear what are the species whose concentrations are being compared. For example, if "said Ag and Sn," is being compared, does this mean that the total atomic concentration of Ag and Sn in the copper matrix is compared in two locations, or that concentrations of either Ag or Sn is compared, or something else? Is the comparison to be based on atomic or weight basis? It is unclear what is the significance, if any, of the word "or" preceding the phrase "a eutectic of Ag and Sn." It is unclear where are the locations denoted "a portion of a sub-layer of the alloy" and "the alloy nearest said backing layer." What defines a "portion," what defines a "sub-layer," and what defines "the alloy"? With respect to the backing metal or the roughened surface, is one location necessarily closer than the other or do these designations mean something else? It is unclear what is meant by the phrase "where essentially no secondary phase of Ag or Sn is formed." Does this phrase mean that no secondary phase of Ag is formed and no secondary phase of Sn is formed or does this phrase mean that no secondary phase of Ag is formed or no secondary phase of Sn is formed?

- IV. Regarding Claim 2, it is unclear what is meant by the phrase "where essentially no secondary phase of Ag or Sn or said at least one additive element is formed." Does this phrase mean that no secondary

phase of Ag is formed and no secondary phase of Sn is formed and no secondary phase of said at least one additive element is formed or does this phrase mean that no secondary phase of Ag is formed or no secondary phase of Sn is formed or no secondary phase of said at least one additive element is formed? It is unclear what is the antecedent basis of the phrase "said Ag and Sn, said hexagonal compound, or said eutectic." Claim 1 refers to solid dissolved and secondary phase Ag and Sn and to several hexagonal compounds and eutectics. It is unclear with respect to what baseline the phrase "higher concentration" is to be assessed. It is unclear where is the location denoted "a portion of a sub-layer." What defines a "portion," and what defines a "sub-layer"?

- V. Regarding Claims 11 and 12, as with Claims 1 and 2, the indefiniteness issues pertaining to the meaning of "portion," "sub-layer," "concentration," and "alloy nearest said backing layer" persist. As well, is unclear what are the antecedent bases of the references to said Ag and Sn, said hexagonal compound, said eutectic, and said Ag and Sn and said at least one additive element for reasons already set forth in the above rejections. It is unclear whether the claimed concentration requirement of Claims 11 and 12 is further limiting of or separate from the concentration requirements of Claims 1 and 2,

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where reference in these claims is made to "one of said Ag and Sn, a hexagonal compound, . . . . is present in a higher concentration . . . ."

- VI. Regarding Claim 12, it is unclear whether the hexagonal compound and eutectic further comprise said at least one additive element and obtain the claimed concentration limitation of Claim 12.

***Response to Amendment***

- I. Applicant's amendments are satisfactory for overcoming the Abstract objection and Claim objection of the Office Action mailed on 31 July 2001.
- II. In view of applicant's amendments and arguments, applicant traverses the section 112, second paragraph rejections of the Office Action mailed on 31 July 2001. While applicant's response has overcome several rejections, new and modified rejections are warranted for the reasons set forth above.
- III. In view of applicant's amendments and arguments, applicant has traversed the section 102 rejection over Ohshiro '081 of the Office Action mailed on 31 July 2001. Rejection is withdrawn.

IV. In view of applicant's amendments and arguments, applicant has traversed the section 102 rejection over Ohshiro '695 of the Office Action mailed on 31 July 2001. Rejection is withdrawn.

V. In view of applicant's amendments and arguments, applicant has traversed the section 103 rejection over Ohshiro '081 in view of Oshiro of the Office Action mailed on 31 July 2001. Rejection is withdrawn.

VI. In view of applicant's amendments and arguments, applicant has traversed the section 103 rejection over Ohshiro '695 in view of Oshiro of the Office Action mailed on 31 July 2001. Rejection is withdrawn.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
8. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory



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action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael LaVilla whose telephone number is (703) 308-4428. The examiner can normally be reached on Mondays and Tuesdays.
10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (703) 308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.
11. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Michael LaVilla  
February 12, 2002



  
**DEBORAH JONES**  
SUPERVISORY PATENT EXAMINER